

# Fieldbook

Conserving and caring for vital lands, waters, and wildlife of the Columbia River region through sound science and strong relationships.

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*Crab fossil (Branchioplax washingtoniana)*





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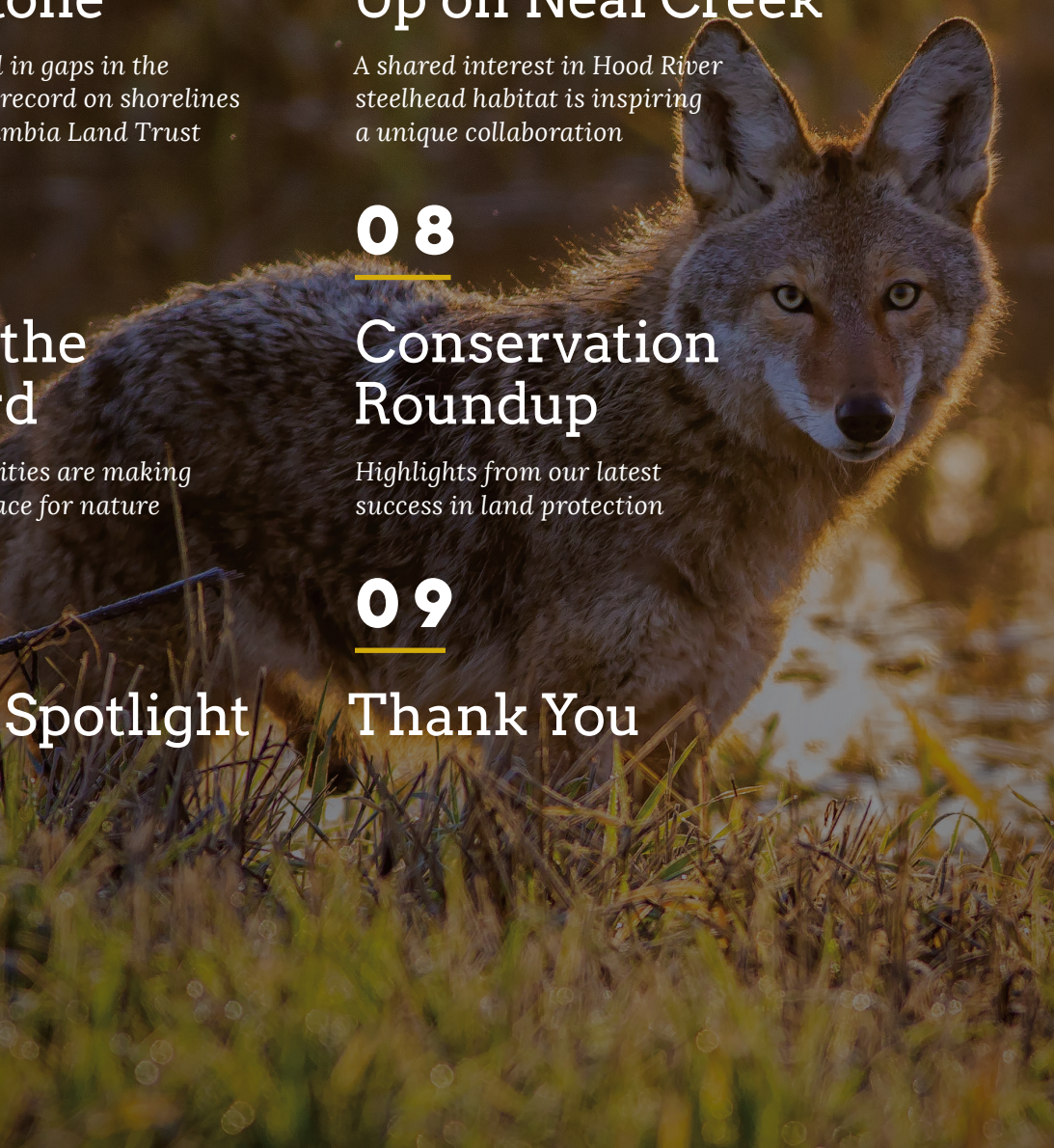
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Our Fearless Approach

Sometimes my daily journal writing helps me uncover a nagging thought, an uncertainty, or a threat. I don't like to dwell in fear, but recognizing and understanding it can help me move beyond it.

These days I have one deep and recurring fear. To fully understand, I want you to journey in your mind to one of your favorite Northwest natural places. What does it look like? What do you smell? How does the air feel on your skin? What do you hear? Take a moment and really make it alive.

My fear is that some of my favorite places—like the one you just went to—will be significantly affected by the projected doubling of our population in the coming decades. And that our kids are less connected to nature than ever before. Will we act now to give our kids a rich natural inheritance? And will they care enough about nature in the future to keep protecting it?

These questions can feel especially daunting when our society seems so focused on our differences rather than on what brings us together.

In response, Columbia Land Trust has adopted an approach we call *fearless conservation*. In our new conservation agenda, we have identified actions to take in the next four years to make sure future generations know, inherit, and steward a Northwest that is thriving, vibrant, and wild. This agenda calls for more of the kind of land conservation we are known for. And it involves understanding that just because we may own the land does not make us right in our interactions with landscapes, creatures, or people. Fearless conservation involves hearing and elevating the voices of people who haven't typically been at the table. It involves engaging people with nature when they are schoolchildren and throughout their lives.

Now is the time for us to fearlessly meet people we may disagree with, to sit down and find our shared interests. I know nature and people to be amazingly resilient. Some of my favorite Northwest places were fundamentally shaped by fire and flood. And our unique Northwest culture is fundamentally shaped by nature. Our chance to be fearless conservationists is now. Act as if our great places depend on you. Because they do.

Glenn Lamb, Executive Director

› Read our Conservation Agenda and get involved at [columbialandtrust.org/fearless](http://columbialandtrust.org/fearless)



Columbia Land Trust has earned accreditation from the Land Trust Alliance, which recognizes land trusts that adhere to national standards for excellence, uphold the public trust with rigorous ethical standards, and take steps to ensure that conservation efforts are permanent.

Columbia Land Trust conserves and cares for vital lands, waters, and wildlife of the Columbia River region through sound science and strong relationships.

Cover photo by: A crab fossil preparation by Bruce Thiel. Photo by Sarah Richards  
Inside cover: Coyote. Photo by DennisDavenportPhotography.com



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## SET IN STONE

Paleontologists fill in gaps in the Northwest's fossil record on shorelines conserved by Columbia Land Trust

BY SARAH RICHARDS

It was January 1978 and low tide in the Columbia River Estuary. In the distance, the striking green of the Astoria–Megler Bridge, erected almost two decades prior, pierced the dense fog. Twenty-three-year-old amateur paleontologist, Jim Goedert, and wife, Gail, were exploring the tidal flats in Pacific County, Washington, for the first time. They were packing rock chisels, petite hammers, and old newspaper.

As the tide steadily pulled back silt and sediment, unveiling worlds encased in mudstone and siltstone, the couple spotted one particular, medium-sized rock amidst a shoreline full of similar stones. Jim took note of a fissure on the rock's surface, and a nodule protruded from its side. With one gentle tap, the rock opened, and a time long ago revealed itself inside the concretion. Jim and Gail had found the skull and teeth of a primitive whale dating back 25 million years, to a geological epoch known as the Oligocene.

“What’s so significant about Southwest Washington is that there’s no representation of the fossil record for many species of the geological time period anywhere else in the region or in the world,” says Jim.

It’s hard to believe that much of the area along the I-5 corridor from Olympia to the Columbia River, known as the Willapa Hills, was underwater 50 to 20 million years ago. Marine creatures of this period lived at an ocean depth between 100 and 900 meters—up to nearly 3,000 feet.

The sea level rose and fell, volcanoes erupted and eroded away, species went extinct while new ones evolved, and

pieces of the Earth’s crust, or tectonic plates, continually smashed together pushing each other up to form mountains and great rock faces. Thick layers of rock formed from the steady accumulation of ocean sediments, and marine uplift and faulting in the subduction zone, where tectonic plates meet, shaping much of the Pacific Coast Ranges we know today. Vertebrates and invertebrates were preserved in concretions that have since eroded from landslides into the Columbia River, giving us a glimpse into the life that once existed and teaching us about a time, the climate, and species, some of which have never been seen in the flesh.

Bruce Thiel, who now works with Jim, is also an amateur paleontologist and a member of the North American Research Group. Bruce is an exceptional artist who prepares fossil specimens using small pneumatic chisels and dental tools to meticulously reveal the tiniest of details in ancient crab claws, nautilus, isopod carapaces, and many other species found at the Pacific County site. The Goederts’ most notable findings from the Land Trust site include more than 100 whale specimens (such as skulls and teeth), sea lion remains, and the oldest published albatross fossil from the North Pacific Basin, *Diomedavus knapptonensis*—a new genus and species smaller than all existing albatrosses. Another species of albatross from the site came from younger rocks, with a remarkably well-preserved skull and beak.

“Land conservation is sometimes the first step in understanding natural history,” says Columbia Land Trust Stewardship Director Ian Sinks. “The presence of these fossils gives us

### WHAT IS A FOSSIL?

A fossil is evidence in rock of the presence of a plant or an animal from an earlier geological period, formed when minerals in groundwater replace materials in bones and tissue, creating a replica in stone of the original organism or of their tracks.

such rich clarity of the distant past as well as perspective on how to best manage these lands for the future.” Columbia Land Trust conserved 452 acres at this important fossil locality in 2012, including 133 acres of shoreline, to protect intertidal wetland habitat for threatened salmon species, and to protect hillside forests for watershed processes and wildlife habitat. In addition, this conserved site along the Columbia River is now being monitored so discoveries can be preserved for future generations of researchers.

Today, the primitive whale skull Jim and Gail discovered as well as many other finds from the Pacific County site reside at the Natural History Museum of Los Angeles County, the Burke Museum at the University of Washington, the Smithsonian Institution’s National Museum of Natural History, and other museums throughout the world, from Poland to Japan. The Goedert’s generous fossil donations, along with Bruce’s preparations, have made it possible for scientists to fill in



ALBATROSS BEAK & BONES



PRIMITIVE WHALE TEETH

pieces of our region’s geological puzzle. When those who come after us look back on our time, the history scribed on paper won’t have the same permanence of stone or the impact of the pioneers working to protect and educate the world around us.🌿

**Ethical Considerations:** Public access to many of Columbia Land Trust’s conserved locations is by permission only due to sensitive species, restoration efforts, and critical wildlife habitat. If you find something you think is significant on an outdoor journey, leave it in place and contact a local official about its location.



SEA LION SKULL



- a | Sea lion fossil skull (*Desmatophoca brachycephala*) from Land Trust site. Snout pictured top
- b | Albatross seabird fossils (*Diomedidae*)
- c | Primitive whale teeth and jaw fragments (*Cetacea*)
- d | Goedert (left) and Thiel (right) collecting fossils
- e | Thiel preparing fossils at his in-home lab



All fossil photos courtesy of Sam A. McLeod of the Natural History Museum of Los Angeles County



# BEYOND THE BACKYARD

Portland communities are making more time and space for nature

BY SARAH RICHARDS



THERE ARE  
**190**  
NEIGHBORHOOD OR BUSINESS HABITAT PROJECTS IN THE METRO REGION

f | Photo courtesy of Focus on Youth  
g | Photo courtesy of Nancy Kodo Conover  
h | Photo by David Scharfenberg

One might assume that the Backyard Habitat Certification Program is possible only for those who own or rent a home with land, or those who have ample time to garden, but the program has encouraged schools, churches, community centers, and other organizations to restore urban areas beneficial to both people and wildlife. Since the inception of the program in 2006, 4,400 properties have been enrolled, 190 of which are considered neighborhood or business projects, and an estimated 55,300 native trees and shrubs have been planted on all certified properties in the Portland Metro area.

It's moving to see local groups carve out time for nature and use the program as a catalyst and tool for education, culture, and even sustenance. We're highlighting three outstanding community gardens to pay tribute to a successful summer of urban restoration and inspire fall and winter plantings.

## Focus on Youth

**Size:** Approximately 1 acre  
**Location:** Southwest Portland  
**Certification:** Silver



Focus on Youth is a one-woman nonprofit run by director Donna Lee Holmes, who purchased this property in 2013 after it had been abandoned for 10 years. The organization has provided learning experiences for more than 13,000 disadvantaged and homeless youth, with programs teaching sustainable gardening, job readiness, nutrition, cooking, and even science and photography. Donna worked with volunteers to transform the site—overrun with noxious plants and stormwater issues—into a sustainable food garden with more than 1,600 native plants and trees that benefit the Fanno Creek watershed. This precious habitat (dubbed Sunflower Farm) is now used as an outdoor classroom as well as a place for job readiness training for homeless youth and doubles as a safe haven for flora and fauna.

Visit [focusonyouth.org](http://focusonyouth.org)



## Heart of Wisdom Zen Temple

**Size:** 9,772 square feet  
**Location:** Northeast Portland  
**Certification:** Silver



Our lives can be overwhelmingly busy with work, family, and other commitments, so where do we go to find balance? The Zen Community of Oregon founded the Heart of Wisdom Zen Temple in 2011 to “provide a refuge of stillness and peace in a busy urban environment, to practice and share Buddhist teachings, and to cultivate the qualities of unflagging optimism, self-discipline, compassion, and wisdom.” Nancy Kodo Conover, who’s practiced Zen for the past 17 years, along with Nan Kyoko Whitaker-Emrich, led the temple’s outdoor restoration efforts. After many years of hard work and help from volunteers, the Heart of Wisdom grounds and newly restored, historic Portland church offer all who visit a place for relaxation, complete with phenomenal rain gardens, ornamental plant beds, and native shrubs. Birds and other wildlife enjoy the rejuvenated habitat, and community members from all backgrounds and experience levels are welcome for meditation and classes in basic Buddhism.

Visit [zendust.org](http://zendust.org)



## Pleasant Valley Elementary School

**Size:** 16.2 acres (10 acres certified)  
**Location:** Southeast Gresham  
**Certification:** Silver



Imagine a world where more kids enjoy learning about plants and wildlife. That’s what one sixth grade teacher at Pleasant Valley Elementary School is aiming for. David Scharfenberg is the driving force behind Wildside, a restoration project that began 11 years ago to create habitat on the outer edges of the school property. The garden features a pathway to make the wild areas more accessible, and family and community volunteers have helped plant more than 4,500 native trees and shrubs. The project also features a greenhouse with a 500-gallon water harvesting system, raptor perches, a newly planted wetland area, and a “three B’s garden,” featuring pollinator plants like showy milkweed and twinberry for bees, butterflies, and birds.

Visit [BackyardHabitats.org](http://BackyardHabitats.org) to start your garden project at your home, your business, or your organization to support more nature in our communities! The Backyard Habitat Certification Program is a joint partnership between Columbia Land Trust and the Audubon Society of Portland.



## SPECIES SPOTLIGHT

River Otter

BY JAY KOSA

From the brackish waters of the Wallacut to the cold, glacial-fed waters of the Klickitat, river otters can be found sliding, swimming, fishing, and playing in the wild channels of the Columbia River region. Because otters avoid polluted and developed areas, Land Trust field staff view their presence as an encouraging indicator of river health.

Scientific name:

*Lontra canadensis*

### IDENTIFICATION

Members of the weasel family, otters are muscular mammals with thick brown fur and long tails. Built for underwater hunting, they have webbed feet, small ears and nostrils that close underwater, and a dense, dual-layered coat that traps air bubbles for insulation. One-foot-wide impressions of mud, snow, sand, or grass along the water's edge, called "slides," are common signs of an otter's presence.

› Learn about our river and wetland restoration projects at [columbialandtrust.org/our-work](http://columbialandtrust.org/our-work)

i | Illustration of a river otter and tracks, hind foot (left) and front foot (right).



### LIFE

Mothers and pups are prone to acrobatic play, as are mating pairs, but adults spend the majority of their time in solitude in freshwater river, lake, or marsh habitats. Otters prefer areas with moving water that doesn't freeze over in winter. They establish waterside dens with underwater access to fishing areas and primarily eat fish, mollusks, and other aquatic invertebrates.

### STATUS

The species is federally listed as of least concern. In the past 200 years, an unregulated fur trade, development, and pollution of waterways and estuaries led to a steep decline in river otter populations, particularly in the U.S. Midwest, East Coast, and Southeast. In recent years, reintroduction efforts in these areas have been successful. Pacific Northwest populations are thriving. 🍄

## UP ON NEAL CREEK

A shared interest in Hood River steelhead habitat is inspiring a unique collaboration

BY JAY KOSA

After winding through a miles-long patchwork of orchards, an unassuming little creek empties into the lower Hood River, forming an intersection of ideal habitat for fish and terrestrial wildlife.

Despite its size, Neal Creek supports roughly one in ten of the steelhead in the Hood River system, along with coho and Chinook salmon. For this reason, the Confederated Tribes of Warm Springs and the Oregon Department of Fish and Wildlife have long made the mouth of Neal Creek a priority location for their fisheries work. In recent years, the Tribes began a study at the site to see if hatchery steelhead smolts introduced at Neal Creek (low in the Hood River Basin), would migrate back there and mingle less with the wild steelhead runs in the larger river system.

When the Tribes realized that the private landowner was looking to sell 45-acre swath of land bisected by Neal Creek, they knew they risked losing access to the land and perhaps losing the habitat to private home development. With the funds to purchase the land, but no interest in owning it, the Tribes needed a partner.

"We knew the folks at the Land Trust were pretty good negotiators, so it seemed like a natural fit," says Chris Brun, Hood River production program coordinator with the Tribes' Branch of Natural Resources.

The Land Trust was eager to help for several reasons. For one, the property represented a golden opportunity to build on its Powerdale corridor floodplain restoration project, which is taking place on 300 acres along 4 miles of the lower Hood River. In addition to vital aquatic habitat, the Neal Creek property's quarter-mile of riverfront also features some of the



region's last remaining lowland groves of Oregon white oak. The Land Trust plans to leave the oak stand intact, where it will continue to benefit an array of species, from songbirds and woodpeckers to deer and osprey.

By conserving more land along the Hood River, a high priority area outlined in our conservation agenda, the Land Trust is protecting one of the Columbia River's most important—and most threatened—salmon and steelhead environments. Maintaining efforts to separate hatchery fish in Neal Creek from the larger Hood River system could benefit the Tribes, the river's many recreational anglers, and the long-term health of wild steelhead runs.

As of publication, the Land Trust anticipates acquiring the Neal Creel property in early 2018. We're grateful to the Confederated Tribes of Warm Springs for choosing to collaborate with us, and to the Bonneville Power Administration for providing critical project funding. Lastly, we thank the Labbe family, who is selling this property with the expressed goal of seeing it conserved, and Greg Fullum, who donated valuable legal services towards the transaction. 🍄

j | Fall foliage along the Lower Hood River, not far from the mouth of Neal Creek. Photo by Jay Kosa



# CONSERVATION ROUNDUP

Highlights from our latest success in land protection

BY JAY KOSA

★ Loomis and Island Lakes

Columbia River

OREGON

WASHINGTON

△ Mt. Adams

★ Trout Lake

White Salmon River

From wetlands to farmlands, Columbia Land Trust's fall conservation successes build on existing efforts to protect local drinking water, food production, and wildlife habitat. Two projects separated by 190 miles demonstrate the diversity of landscapes we're working to protect throughout the Lower Columbia River region.

## Loomis and Island Lakes Pacific County, Washington



In late September, the Land Trust conserved 55 acres in the interior of Long Beach Peninsula. The conserved wetland property builds on 750 acres Columbia Land Trust has conserved along Island Lake and Loomis Lake directly north, in addition to 460 acres of habitat managed by Washington State Parks and the Washington Department of Fish & Wildlife. This complex of lakes and marshes between rows of dunes supply the peninsula's aquifer with freshwater crucial for nearby communities and cranberry farms, while also providing vital habitat for a diversity of species, such as elk, bear, amphibians, and variety of birds.

55  
ACRES

## Trout Lake Klickitat County, Washington

Beyond breathtaking vistas, Trout Lake's assemblage of farmland provides the broader Columbia River region with organic dairy products, as well as medicinal and tea herbs. For 17 years, Columbia Land Trust has worked with the community, local farmers, and biologists to preserve the organic agricultural history and protect a wide array of wildlife species. In September, the Land Trust purchased a conservation easement on 130 acres of the Justesen family farm, effectively ensuring that the property will stay in agriculture for future generations. The iconic Justesen site provides pasture for cows that are part of the first Organic Valley dairy in the state of Washington. 🌱

130  
ACRES



Learn more about these and all our recent projects at: [columbialandtrust.org/news](http://columbialandtrust.org/news)

# THANK YOU

Thanks to everyone who joined us for our 2017 events and tours. Throughout the year, we explored the curiosities of pikas in the Columbia River Gorge, searched for native plants by canoe on Washington's Long Beach Peninsula, and drew inspiration at four of Portland's outstanding certified Backyard Habitats. Our emerging leaders council, our volunteer action teams, and business partners HP and adidas helped us restore and maintain vital habitat close to home. Thank you for boldly supporting Columbia Land Trust. See you again soon.

Sign up for 2018 Events & Tours  
[ColumbiaLandTrust.org](http://ColumbiaLandTrust.org)



2017 picnic guests hike at Cranes Landing in Vancouver.  
Photo by Sarah Richards





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# FEARLESS CONSERVATION

A campaign to conserve the Northwest's most  
important places and build a broader  
conservation movement

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Columbia Land Trust is looking to the future with a sharpened focus and a commitment to practicing what we call fearless conservation. It means having the courage to listen, embrace diverse perspectives, and arrive at truly collaborative solutions. In this spirit, our new conservation agenda outlines what we will do over the next four years, and the next quarter-century, to protect the region's lands, waters, and wildlife.

To succeed in protecting nature, we need more people to band together. We ask that you fearlessly contribute your gifts—your time, your passion, your support—to this remarkable corner of the world.

Visit our website to read our conservation agenda, explore an interactive map of our conservation priorities, and watch the stories of five fearless individuals leading conservation efforts across the Columbia River region.

[ColumbiaLandTrust.org/Fearless](https://ColumbiaLandTrust.org/Fearless)



**JOIN US IN  
BEING BOLD**

Share the Northwest people, places,  
and pursuits that inspire you

**@ColumbiaLandTrust #FearlessNature**

k | *Elaine Harvey, biologist with Yakama Nation Fisheries,  
in a still from the short film One River | Five Voices*